Washington State Conservation Commission

PROFESSIONAL ENGINEERING SERVICES GRANTS PROGRAM

2004 Report of Accomplishments

CONSERVATION COMMISSION
2004 Report of Accomplishments
Professional Engineering Services Grants Program

Bill Language - Summary

- *The purpose of the Professional Engineering Services Grants Program is to enable conservation districts to hire Professional Engineers so that they may provide engineering services to private landowners, and engineering oversight to conservation district technicians.*

Source of Funding

- *$1.5 million for the 2003-05 Biennium from the Water Quality Account*

Distribution of 2003-05 Professional Engineering Services Grants

- *Professional Engineering Task Force met in May 2003 to develop proposed policies for the 2003-05 Professional Engineering Services Grants Program. Policies were approved by the Conservation Commission at the May 15, 2003 meeting.*
- *Conservation districts cluster together for the purposes of the Professional Engineering Grants Program.*
- *For the 2003-05 Biennium, nine clusters have formed to service the state's 48 conservation district engineering needs.*
- *Each cluster is receiving a grant in the amount of $161,666.*
- *Professional Engineering Services Grants are available only to conservation districts that demonstrate program and money management ability by meeting the Management Standards adopted by the Conservation Commission.*
- *Grant Budgets:*

Technical Assistance to Landowners	$1,280,063
District Grant Administration	$174,937
Commission Program Administration (½ FTE)	$45,000
Total	$1,500,000

Rollup of 9 Clusters' Accomplishments *(01/01/04 through 12/31/04)*

Total number of landowners to which engineering assistance was provided	370
Total number of cooperators who implemented BMPs	111
Total number of BMPs implemented	225
Total number small farm BMPs completed	61
Total number habitat restoration BMPs completed	70
Total number AFO/CAFO BMPs completed	59
Total number irrigation improvement BMPs completed	33
Total number non point water quality improvement BMPs completed	43
As a result of the BMPs completed, total number acres that will no longer contribute to surface or groundwater pollution	2237.4
As a result of the BMPs completed, total number of stream miles protected, enhanced, or restored	220.5
Total grant amount spent	$666,888
Amount of other funding leveraged with this funding	$3,557,894

Individual Engineering Cluster 2004 Accomplishments

- Central Klickitat Conservation District (Administering District for the following cluster of districts: Central Klickitat, Benton, North Yakima, Eastern Klickitat and Underwood)
  - *Central Klickitat CD – Site visits and field surveys were done and a preliminary design prepared to address channel bank erosion and to improve water quality on ¼ mile of the Little Klickitat River within the city limits of Goldendale on two project sites. Surveys, design and cost estimates were done on 4 ponds with significant leakage; three were settling ponds, one a wildlife reservoir. Provided construction oversight and engineering on barnyard facilities to prevent runoff into Swale Creek. Made surveys and design layout for three center pivot irrigation systems, converting from side roll wheel lines to center pivots. Survey, design and cost estimates were done for a stream channel renovation including livestock access and exclusion fencing. Made surveys, design and cost estimate and provided construction oversight for repairs following storm flows just after installation by NRCS on stream channel repair on Little Klickitat River.*

  - *Benton CD – Preliminary design concepts for two proposed riverbank erosion project developments, investigation completed and design developed for fish ladders and fish channel on the Amon Creek/Meadow Springs project, and provided follow-up for permits on Mitchell riverbank repair/stabilization project.*
  - *North Yakima CD – Engineering services from this Program have been used to plan, design and implement several Projects for NYCD. These include Taylor Ditch Diversionary Structure, Upper Lust Fish screen and Barrier Removal and Pellicer Barrier Removal. The Engineering Program has also supported several other projects related to NYCD's overall program.*
  - *Eastern Klickitat CD – Site visits and field surveys were done and a design prepared to address channel bank erosion and to improve water quality on ¼ mile of Pine Creek. Projects in EKCD included preliminary consultation for a wastewater disposal pond and filtration system for a proposed new winery, a livestock watering facility, a stream crossing structure and a stream channel erosion and water quality project.*
  - *Underwood CD – Preparing preliminary bank stabilization plans for 4 landowners in the Trout Lake Valley, and 1 landowner in the Wind River Valley.*

- Kittitas County Conservation District (Administering District for the following cluster of districts: Chelan, South Douglas, Foster Creek, and Okanogan)
  - *Kittitas CD – Design and construction of various management practices for several landowners along the Teanaway River. Designed and permitted various elements of three SRF grants that were awarded to KCCD to remove fish barriers and screen irrigation diversions. Provided technical assistance to various project associated with the efforts of Yakima Tributary Access Habitat Program (YTAHP), a planning and implementation effort funded by BPA with the goal of opening up and improving salmonid habitat to tributaries of the Yakima River.*

  - *Foster Creek CD – Survey and Technical Assistance to the East Foster Creek Project. Survey and Technical Assistance on approximately one-hundred forty stream miles in Douglas County to assist the Douglas County Watershed Planning efforts.*
  - *Chelan CD – Designed project for a private landowner to reduce erosion, stabilize the bank and control the grade at the confluence of the stream and an irrigation return on Mission Creek. The District has also exchanged District Engineer time on project inspection and monitoring for NRCS Engineer services to design structures for the Entiat River that require specific training and experience.*

- Lewis Conservation District (Administering District for the following cluster of districts: Lewis, Clark, Cowlitz Wahkiakum, Pacific, and Grays Harbor)
  - *Lewis CD – 20 Landowners assisted, 1 CAFO/AFO, 3 Irrigation, 10 Habitat, 4 Water Quality, 2 Small Farm. 2 Grants secured for 2005 Construction. 2 Grants pending with likely approval for Construction 2005 (ranked 1 and 2 locally for SRFB). 3 Project designs completed for 2004 construction. 3 Project designs completed with permits pending for 2004 construction. 5 Projects under final design for 2004 construction. Member, Technical Advisory Board for Lower Columbia Fish Recovery Board*

  - *Clark CD – Completed a survey and design for a livestock bridge and streambank restoration project. Survey and technical assistance to the Lower Columbia Fish Enhancement Group, Clark County, and Clark Public Utilities.*
  - *Cowlitz CD – The District is serving as the local sponsor for two landowners that have been awarded project funding through the Family Forest Fish Passage Program. We have completed design drawings, obtained permits and are in the construction phase of two projects to improve fish passage*
  - *Wahkiakum CD -- The District is serving as the local sponsor for one landowner that has been awarded project funding through the family forest fish passage program. We have completed design drawings, obtained permits and are in the construction phase.*
  - *Pacific CD -- Two significant projects have received professional engineering assistance through the PCD.*
  - *Grays Harbor CD -- Completed the plans and permit applications for stream stabilization/rechanneling on Wildcat Creek. Project implementation will begin when permits are received. Completed design work for solid set sprinkler system (NRCS practice code 442) for Grayland cranberry producer, completed design work for upgrading irrigation system (NRCS practice code 442) and ditch cribbing and covering (NRCS practice code 554) for North Beach cranberry producer, and completed design work for buried mainline (NRCS practice codes 430DD and 358).*

- Mason Conservation District (Administering District for the following cluster of districts: Mason, Jefferson, Kitsap and Clallam)
  - *Mason CD – Provided engineering planning, design, and technical assistance to a large landowner in the Skokomish River Valley. The landowner suffered loss of cropland due to a major dike failure, which resulted in a complete river avulsion through his property, and also suffered cropland damage due to shifting flood patterns over a large portion of the remaining property. The engineer developed a plan to put the river avulsion area into a conservation easement and protect the remaining property with a large engineered logjam. To date, the landowner has secured a $50,000 grant for the engineered logjam construction, and Mason County has applied for a $305,900 grant to secure a conservation easement for 144.84 acres of riverfront and floodplain area on the landowner's property. Planning for additional restoration on the landowner's property is ongoing.*

Provided engineering planning to another large landowner in the Skokomish Valley to reduce flood damage and develop a nutrient management plan to protect the Skokomish River and Hood Canal from surface water contamination by agricultural wastes. Developed a $100,000 grant proposal to build a demonstration waste storage structure that will prevent composting animal wastes from contaminating surface waters during flood events.
Provided engineering planning, design and permitting assistance to 5 landowners to stabilize eroding stream banks with bioengineering and engineered logjam techniques.

Provided engineering planning and designs to the South Sound Salmon Enhancement Group for replacement of 5 fish barriers with bridges or stream-simulation culverts. Three of the project locations were funded at over $30,000 each for construction, the remaining locations have project proposals submitted to the SRFB.

Provided engineering planning and designs to the Allyn Salmon Enhancement Group for the removal of a dike from the intertidal area of Sherwood Creek in Case Inlet. This project is now partially funded, engineering assistance for permitting and construction planning continues.

Provided engineering consultation to assist a landowner in stabilizing surface erosion and restoring slope stability on a vertical bluff overlooking Case Inlet. The design featured bioengineering techniques to both stabilize the slope and provide habitat for shore birds.

Provided engineering consultation and design to the Skokomish Indian Tribe for the removal of saltwater dikes and restoration of over 140 acres of intertidal wetland at the mouth of the Skokomish River. The project is currently funded at $140,000 by a SRFB grant. Currently coordinating with the Tribe, Tacoma Public Utilities, and Public Utility District 1 to secure required permits and coordinate relocation and protection of high-capacity transmission lines in the project area. The United States Army Corps of Engineers is considering taking over the project under the Puget Sound and Adjacent Waters Program. If they adopt the project, the USACOE will provide additional funding up to $315,000 and will oversee construction.

Providing engineering consultation to Mason County and the Skokomish Tribe to explore the formation of the Skokomish River Restoration Council. Initial meetings have gone well, and have focused on studying other successful restoration efforts in rivers with salt-water estuaries. Mason County has also asked the Conservation District to provide engineering consultation, working with WSDOT, for the replacement of the Purdy Creek Bridge on US Highway 101 in the Skokomish Valley.

Provided engineering consultation and design to another engineer preparing a Wetland Reserve Program grant application for the restoration of a stream and saltwater estuary. Consultation included a detailed stream sediment transport analysis, topographic surface modeling of the estuary, and stream restoration design. The design was reviewed and approved by NRCS, resulting in a $1,000,000 WRP grant for the project.

Designed animal containment/waste storage structures for two landowners.

- *Jefferson CD* – Designed a large bank stabilization/floodplain protection project. Designed a deck repair for bridge, part of a habitat restoration project. Provided engineering review for a small stream restoration project. Prepared preliminary bridge designs for habitat restoration project.
- *Kitsap CD – Our cluster engineer provides BMP designs for designated projects on small farms in Kitsap County. In FY04 the Olympic Cluster engineer provided the following design services to Kitsap CD: 3 access roads, 1 livestock bridge and 1 waste storage facility; 1 pipeline and 1 spring development project; 1 obstruction removal, 1 diversion and 1 structure for water control.*

- Pierce Conservation District (Administering District for the following cluster of districts: Pierce, Thurston, King and Snohomish)
  - *Pierce CD – Engineering work was done on the Mashel River Restoration and the Ohop Creek Restoration projects, major salmon recovery work in cooperation with the Nisqually Indian Tribe with this funding in 2003. Both projects have been rated top priority for restoration of endangered Nisqually River Chinook salmon.*

- *Thurston - Our cluster engineer visited 2 sites in our County. Design work has begun for a dairy waste storage structure.*
- *Snohomish - The SCD Engineering program is an integral part of the conservation planning process and draws it's funding from various grants. Engineering technical assistance is provided to SCD Staff and Landowners in support of projects and implementation of BMPs. SCD Engineering produced 23 designs and worked with over 60 landowners, providing technical assistance through site visits, surveys, CAD Design, GIS work, permit assistance and construction inspection. These efforts resulted in the implementation of 15 on-the-ground projects.*

- Skagit Conservation District (Administering District for the following cluster of districts: Skagit, San Juan, Whidbey Island and Whatcom)
  - *San Juan County CD – Completed design restoration plan for Port Stanley lagoon and salt marsh system, including tide gate design, dredging plan, and review of required permitting. Continued to provide technical assistance for Deer Harbor estuary restoration project. Provided necessary engineering support for eight RMS farm plans.*
  - *Skagit CD – Design, permits, & construction of culvert to bridge replacement for fish passage on Skiyou Slough. Designs for dry manure storage, bank erosion control, drainage improvements, stock watering pipeline, stormwater bmps, wetland enhancement, dairy waste runoff control, low impact development, creek stabilization weirs, and culvert replacement projects. Lead for characterization of hydrology and groundwater in No Name Slough Watershed.*
  - *Whatcom CD – Completed topographic and cross section survey of a mile of the Tenmile Creek valley in support of the plan to restore habitat functions along the creek. Surveyed and prepared permit applications to support agricultural drainage ditch maintenance for Whatcom Drainage Improvement District #7 (California Creek/Custer area). Provided survey and technical assistance to Lummi log jam project on the South Fork Nooksack.*
  - *Whidbey Island CD – Completed engineering consultation, analyses and design support for 4 landowners regarding restoration of wetland function, beaver management, surface drainage, and roof run-off structures.*

- South Yakima Conservation District (Administering District for the following cluster of districts: South Yakima, Othello, Franklin, Warden, Moses Lake and Upper Grant)
  - *The most significant on the landscape accomplishment in the South Central Professional Engineering cluster was the implementation of 62 BMPs: 38 Livestock BMPs (nutrient management on dairies and some feed lots); 24 irrigation improvement BMPs (conversions to more efficient methods); 12 of the above 62 BMPs w ere on operations meeting the definition of a "small farm"; A total of 55 landowners received some type of technical engineering assistance that may or may not have included these BMPs. Over 7300 acres were directly impacted from a conservation standpoint by the implementation of these BMPs. The actual total number of acres benefited by the implementation of these BMPs is difficult to gage. There is an obvious benefit from BMPs on livestock operations (such as lined waste storage ponds, settling basins, concrete manure storage structures, berms, diversions, terraces, etc.) as well as from the irrigation improvements (system upgrades, tailwater recovery systems, etc.) to surface and subsurface waters of the state of Washington. The impact to streams and rivers that contain federally listed threatened and endangered species is difficult to quantify, but cannot be understated.*

- Spokane Conservation District (Administering District for the following cluster of districts: Spokane, Ferry, Stevens, Pend Oreille and Lincoln)
  - *Ferry County CD – Kettle River Irrigation Intake Rehabilitation, a preliminary survey was completed to determine the existing site features in December 2004; Empire Creek Culvert Installation, a preliminary survey was completed to determine the existing site features in December 2004; South Fork San Poil Culvert Replacement, a preliminary survey was completed to determine the existing site features in October 2004. Conceptual designs and preliminary cost estimates were prepared in November and submitted to the funding agency.*

  - *Lincoln County CD – Hawk Creek Bank Stabilization, a site survey and project designs were completed for the project. Construction stakeout of the proposed work was completed followed by an onsite review with the construction contractor.*
  - *Pend Oreille CD – Lower Indian Creek Fish Passage, Irrigation Diversion Upgrade, and Culvert Replacement Project, Conceptual designs for the project were discussed with the landowners to confirm their participation and approval to proceed with the project survey and design. Project survey work was completed in summer 2004 with project design work scheduled for winter 2005 and construction scheduled for summer 2005. Middle Indian Creek Irrigation Diversion Rehabilitation, project survey work was completed in fall 2004 with project design work scheduled for winter 2005 and construction scheduled for summer 2005. Upper Indian Creek Culvert Replacement, project survey work was completed in fall 2004 with project design work scheduled for winter 2005 and construction scheduled for summer 2005. Buck Creek Culvert Replacement, a preliminary site survey was completed in October 2004 and the revised cost estimates submitted in November 2004. Cedar Creek Culvert Passage Barrier Removal Project, survey work was completed in July 2004 and all survey data was furnished to the USFWS engineering staff for design work. A follow-up survey was completed in December 2004 to document the as-built conditions to evaluate if additional work needs to be completed for project components to meet current fish passage criteria. Bear Paw Creek Bridge Replacement, project survey work was completed in August 2004 with preliminary project designs completed in September 2004. Discussions with the landowner on the final configuration of the bridge continued through November 2004. Project designs are to be completed in winter 2005 with installation scheduled for summer 2005.*
  - *Stevens County CD – Colville River Bank Stabilization Project, Project design work was completed in summer 2004 with implementation completed in late summer 2004. Final planting and fencing will be completed in spring 2005. Mill Creek Bank Stabilization Project - Wolfe, a project site review was completed in December 2004 with the landowner to discuss alternatives for bank stabilization and project funding. Project surveying is scheduled for spring 2005 with project designs completed in late spring 2005 and implementation in summer 2005. Mill Creek Stabilization Project – Wilson, a project site review was completed in December 2004 with the landowner to discuss the project scope and alternatives for bank stabilization. Project surveying is scheduled for spring 2005 with project designs completed in late spring 2005 and implementation in summer 2005. Mill Creek Bank Stabilization Project – Henry, a project site review was completed in December 2004 with the landowner to discuss the project scope and alternatives for bank stabilization. Project surveying is scheduled for spring 2005 with project designs completed in late spring 2005 and implementation in summer 2005.*

- Whitman Conservation District (Administering District for the following cluster of districts: Whitman, Walla Walla, Columbia, Pomeroy, Asotin, Palouse, Palouse Rock Lake, Pine Creek and Adams)

- *Adams CD – Very limited support has been received during the past season, however a continuation of previous seasons stream bank protection program utilizes most available hours approved for the districts authorized time.*
- *Columbia CD –Survey assistance to the Dayton East End Irrigation Ditch. Ditch installed 2,200 feet of new enclosed pipeline to reduced conveyance loss. Scoped, assessed and surveyed for 1 private off-river livestock water system. Design work currently underway. Scoped, assessed, surveyed, designed, and inspected a culvert installation under the EQIP program.*
- *Pomeroy CD* – We used our professional engineer, Lance Horning, in the engineering of several more livestock watering systems funded under the CREP and CCRP programs. He worked in cooperation with NRCS personnel.
- *Whitman CD – Provided on-site technical assistance to 4 livestock owners, assisting to meet the Department of Ecology's water quality vague guidelines. Design, management, and construction supervision of 20 landowners resulting in a field access culvert, 3 armored water points, 1 trough, and 2 roof runoff systems. Coordinated required Professional Engineering Board meetings and manager coordination meetings. Administered the Professional Engineering grant for the Southeast Area engineer.*

Washington Conservation Districts
Assisting Land Managers with
Their Conservation Choices